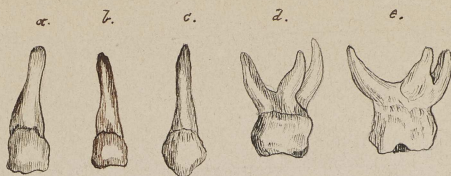


An Essay  
on  
"The Teeth and their relation  
to the Human Economy"  
Respectfully submitted to the  
Faculty  
of the  
Homoeopathic Medical College  
of  
Pennsylvania  
On the First day of February  
One Thousand eight hundred  
and fifty seven  
By  
J. G. Stehman,  
of  
Pennsylvania.

*l. Lateral Incisor.*

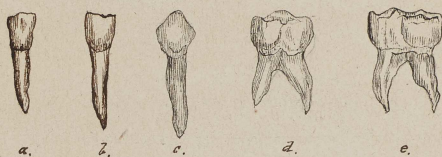
*c. Canine.*

*d. First Molar.*



*a. Central Incisor.*

*e. Second Molar.*



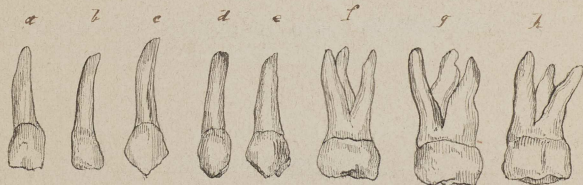
# TEMPORARY TEETH.

*a. Central Incisor.*

*d. First Bicuspide.*

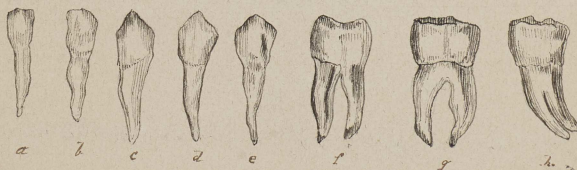
*e. Second Bicuspide.*

*g. First Molar.*



*l. Lateral Incisor.*

*g. Second Molar.*



*a. Central Incisor.*

# PERMANENT TEETH.



The  
Teeth and  
their  
Relation to the  
Human  
Economy

By  
J. E. Lehman

1857

## The teeth and their Relation to the Human Economy.

The teeth have been by some anatomists, classed with the bones, but as they differ both in structure and developement, from bone, they are not any longer considered as such but as appendages of the digestive apparatus.

The peculiarities, which distinguish them from bone are these:



The nutritive changes known to the bone, are entirely unknown to the teeth; they have no Haversian canals; they are composed of three substances two resembling bone, and the other wholly unlike it called enamel; the ossific portion of the tooth has more earthy matter than bone, and the enamel has no gelatin.

Man has two successions of teeth the first are confined to childhood, and are called temporary, or deciduous, the second belong to manhood, and continue to old age, these are called permanent.

The temporary teeth number twenty, and are divided into three classes eight incisives, four canine, and eight

molars, the permanent number thirty two, and are divided into four classes, eight incisors, four canines, eight bicuspids, and twelve molars.

Each tooth is divided into a crown, neck, and root or fang. The crown is that portion above the gum, the root is that which is received in the alveolar socket, and the neck is the constricted portion connecting the two.

### Structure and Origin of the teeth.

The teeth are composed of three different substances, (as mentioned heretofore) viz- dentine, or tooth ivory, Enamel, and Cementum.

The dentine constitutes the greatest part of the tooth, and differs from bone



in having less animal matter and destitute of medulla. Blood vessels, Haversian canals &c.

The Enamel forms the crust, covering the crown, being thickest on the top, tapering gradually towards the root. at its termining, the Cementum commences, gradually thickening to the apex of the fang, and also lines the upper wall of the cavitas pulpa.

At the base of the crown, of all the teeth, there is a cavity which is called the cavitas pulpa, being continuous with the canal that opens at the apex of each fang; in this cavity is a pulp, which receives its vessels and nerves through said canal.

The rudiments of the teeth have been seen, as early as the seventh week of utero-gestation, when the germs of the first deciduous molars can be seen assuming the form of a granular papilla, situated in the alveolar groove, bounded anteriorly by the anterior alveolar ridge, posteriorly by the posterior alveolar ridge.

At the end of the eleventh week the germs of all the deciduous teeth can be distinctly seen: these granular papillae in progress of development assume the character of pulp, and complete their form about the fourth or fifth month of utero gestation, when fully formed, constant depositions of dentine take place, in the direction of the fang



on the surface of the pulp untill the structure is completed from without inwardly.

If the tooth be an incisor or canine, the lamina will have the shape of a cone, if a molar it will have as many cones as there are tubercles.

The enamel is formed simultaneously with the ivory, assuming the form of a laminated tissue, by the crystalline substance being secreted into the meshes of the vascular lining membrane of the sack, from the centre of the crown to the circumference, being directly opposite to that of the dentine.

Cementum is formed last, probably by a secretion of the inner sack, which envelopes the fang, acting as its periosteum.

## Eruption

When the crown of the tooth is formed covered with enamel, and the fang grown to the bottom of the socket, it then by its pressure causes the reflected portion of the sack, and tooth to approach each other, and the latter to pass through it and the gums.

This sack is formed by the mucous membrane being carried before the alveolar ridges, approaching each other, they form a follicular sack enveloping the papilla, the opening is closed finally by operculum.

After the eruption of the tooth the sack has assumed its original follicular form, being continuous with the mucous membrane of the mouth, this sack then



begins to shorten more rapidly than the fang grows, whereby the tooth is more quickly drawn up, leaving an open space between the unfinished <sup>teeth</sup> root, and the bottom of the socket, in which the completion is more speedily effected.

Between the deciduous, and permanent teeth a connection exists, (the *Subnauculum dentis*) at an early period of formation of the deciduous tooth, its investing membrane or sack gives off, a process or bud containing a portion of the pulp of the parent sack, this constitutes the rudiment of the permanent tooth.

This process assumes a distinct form, though still connected to the parentsack by a peduncle, which becomes less essential as the progress of development goes on.

and is finally atrophied to a mere thread, when in this state it is considered as a gubernaculum to the permanent tooth by some anatomists.

The periods of appearance of the teeth are very irregular, commencing about the sixth month, and ending about the twenty fourth; the permanent from the sixth to the twenty first year.

I now purpose treating in a concise manner some of the pathological conditions of the system during dentition; the affections of this period are numerous.

Diarrhoea frequently occurs as one of the first effects from irritation of the tooth within the dental sack.

Convulsions occur through the cerebral



and spinal nerves, causing congestion with accelerated pulse.

Local inflammation of the mouth producing thickness of the mucous surface frequently extending to the Eustachian tube producing temporary deafness which may be taken for some congenital defect.

Derangement of the digestive apparatus. Skin affections.

Fits involving loss of consciousness and lesions of the brain, producing permanent impairment of the mental faculties.

All these may occur, and many more, but when any do occur during dentition, the true character of the mouth should be obtained if possible.

A few words in regard to cutting the gums may not be amiss here.

When teeth are slow in making their appearance, and set up a great deal of irritation, it is good practice to cut the gums.

Before you operate, you must be sure that the tooth is fully formed, if it is not, bad consequences may be the result. again, when you operate, do not merely scarify the gums, and set up new inflammation, but cut down on the tooth to open the sack, its investing membranes. here is where the difficulty lies, the tooth in trying to rupture the membrane is what produces the irritation.



We have shown some disturbances which occur during dentition, but difficulties stop not here. we very frequently see females during gestation and menstruation troubled with toothache in healthy teeth, this goes to prove that there is a sympathetic connection between the uterus, its appendages, and the teeth. when such a strong sympathy exists between those organs, is it not possible that diseased teeth may affect the uterus during gestation. producing abortion.

This is a mixed point among Physiologists. further investigations are necessary, to establish it as a fact.

But diseased teeth may affect the foetus in utero. by arousing latent dyscrasia, it acting upon that organ at this period when it is extremely

sensitive to all impressions.

The uterus is not the only sufferer, but the whole digestive apparatus feels the stroke, and gives unmistakable signs of oppression, by the poisonous matter of the teeth, being carried thither, by the saliva and food, by these means colics of infants have been produced, through the nurse who had carious teeth, while nursing by first tasting every spoonfull, then giving it to the infant after it was impregnated with poison from her teeth.

Again this constant flow into the system, may arouse latent dyscrasia, which often manifests itself in some outward form



The respiratory organs are affected by the constant inhalation of air poisoned by the teeth, there is no doubt but that it is the exciting cause of phthisis under favorable circumstances.

Facial neuralgias are frequent occurrences of decayed teeth the seat of this affection is generally in one of the Trigemini or fifth pair of nerves, these are distributed to the superior and inferior maxillaries, tongue, eyes and integument,

Many opinions are entertained in regard to the causes of their decay.

<sup>as</sup> The one most plausible to my mind arises from the lamentable fact of our race having been Mercurialized for many centuries, and thus the mercurial cachexia is transmitted from generation to generation.

Likewise the pernicious practice of drugging children with coffee affects them materially, they come out slowly, and with convulsions, and when out are very imperfectly formed, fall out decayed before the period of changing.

Trifling with quack dentists and dentifrices.

Sudden changes of temperature, and the use of many acids &c.